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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,759	07/28/2003	Isoji Yao	030858	4426

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EXAMINER

PAIK, SANG YEOP

ART UNIT PAPER NUMBER

3742

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/627,759

Applicant(s)

YAO, ISOJI

Examiner

Sang Y. Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 and 5 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugo (US 5,076,467) in view of Langmuir et al (US 2,437,963) or Ohnishi et al (US 5,186,120), Benade et al (US 6,072,937), and Hutchinson (US 6,647,204).

Sugo shows a steam-supply apparatus including a pressurized steam sent from a steam-generating portion through an electromagnetic valve and a connecting tube. However, Sugo does not show providing a heater to the steam-blowing portion, the connecting tube being flexible, and a return pipe.

Langmuir shows a steam-supplying apparatus having a steam generating portion and a steam blowing portion where a heater is provided to the steam blowing portion to maintain the desired steam pressure and temperature. Ohnishi also shows providing a vapor generating portion and a vapor blowing portion where a heater is provided to the vapor blowing portion to maintain the desired vapor pressure and temperature. Benade shows a steam generator with a flexible tube connected to the steam generator to direct the steam out of the steam chamber. Hutchinson shows a steam apparatus having a steam by pass valve that returns the heated steam back to the water supply (see Figure 24).

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In view of Langmuir or Ohnishi, it would have been obvious to one of ordinary skill in the art to provide the heater to the steam-blowing portion to maintain the desired steam pressure and temperature. Furthermore, the claimed heating steam circulation passage would inherently be present in the electromagnetic valve in order to pass the steam there through and would also be heated by the heated steam. In view of Benade, it would have been obvious to one of ordinary skill in the art to adapt Sugo with a flexible connecting tube so that the steam can be conveniently directed in a flexible direction. In view of Hutchinson, it would have been obvious to one of ordinary skill in the art to adapt Sugo with a return pipe to control the output of the heated steam and to divert the unused or excess heated steam to the water supply for reuse.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugo in view of Langmuir or Ohnishi, Benade, and Hutchinson as applied to claims 1 and 2 above, and further in view of Yamaguchi et al (US 5,803,938).

Sugo in view of Langmuir or Ohnishi, Benade, and Hutchinson shows the structure claimed except a pressure-reducing valve disposed on a steam passage between the boiler and the electromagnetic valve.

Yamaguchi shows a pressure adjuster (31) disposed between the vaporization chamber and a steam outlet valve. In view of Yamaguchi et al, it would have been obvious to one of ordinary skill in the art to adapt Sugo, as modified by Langmuir or Ohnishi, Benade, and Hutchinson, with a pressure reducing or adjuster valve to further control the rate at which the steam is generated and sent to the steam outlet valve including the electromagnetic valve.

***Allowable Subject Matter***

4. Claims 4 and 5 are allowed.

***Response to Arguments***

5. Applicant's arguments filed 1/4/06 have been fully considered but they are not persuasive. With respect to claim 1, the applicant argues that the applied prior art does not show essentially the claimed heating system disposed in the electromagnetic valve that is preliminary heated when the valve is in a closed state. This argument is not deemed persuasive since Sugo clearly shows the electromagnetic valve connected to a steam generating portion that would preliminary heat the valve as the heated steam is directed thereto either in the closed or open valve state. There is nothing that would inhibit the electromagnetic valve from being heated by the steam.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y. Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Paik

Sang Y Paik  
Primary Examiner  
Art Unit 3742

syp